5+1+1 day Programmable Thermostat

For electric baseboard & convection heaters

CONTROL™ BY/PAR CANARM

Instruction Manual
model: M6001A

High VOLTAGE
120 V/240 V AC, 60 Hz

C ETL LISTED US
Intertek

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Prior To Use

Introduction

This thermostat is compatible with electric baseboards, fan-assisted (convectors) and radiant ceiling heating systems. The unit is rated for high voltage wiring only (120 V/240 V).
The minimum load requirement is 500 W. This thermostat is NOT compatible with central heating systems (24 V or mV). Please see the compatibility chart on page 4 for more details.

Features

- Ideal for electric baseboards, fan assisted (convectors) and radiant floor/ceiling heating
- 5+1+1 day programming - set one program for Monday to Friday, one program for Saturday and one program for Sunday with up to 4 temperature settings per day (morning, day, evening, night)
- Set and display temperature in Celsius or Fahrenheit (in half degrees)
- High limit function - set a maximum temperature to help manage heating costs
- TRIAC system operates on 20-second or 240-second cycles for accurate temperature reading, and provides quiet operation
- Maintain room temperature accurately to within +/- 0.3°C (+/- 0.6°F)
- Usage monitoring - tracks total ON time
- Automatically pre-heats room prior to program start-time
- Easy-to-read LCD
- 12-hour or 24-hour clock display
- Simple two-wire installation

Package Contents:
M6001A Thermostat
Instruction Manual (this document)
2 Screws
2 Wire Nuts

NOT for use with low voltage (24 V) central heating & cooling systems & wall-mounted furnaces.

Prior to Use

Warning and Safety Precautions

- Read this instruction manual thoroughly prior to the installation and the use of the thermostat.
- Follow all instructions in this manual.
- Keep this instruction manual for future reference.
- See page 6 for detailed installation precautions.
- Clean the thermostat only with a dry cloth.
- Do not operate this thermostat with wet hands.
- Do not block any ventilation openings of the thermostat.
- Do not expose this thermostat to dripping or splashing.
- Do not expose this thermostat to excess heat.
- Do not attempt to disassemble, repair or modify this thermostat.

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE. IT IS STRONGLY RECOMMENDED TO HAVE A CERTIFIED ELECTRICIAN ON SITE TO ENSURE THE SAFE INSTALLATION OF YOUR THERMOSTAT.
IN QUEBEC, THIS PRODUCT MUST BE INSTALLED BY A QUALIFIED ELECTRICIAN.

The manufacturer assumes no responsibility for improper wiring - or any resulting damages.
Improper installation by a non-professional automatically voids the warranty.

Compatibility

In general, equipment with high voltage control is only compatible with the electric baseboards, convectors or radiant heating systems.

HEATING/COOLING SYSTEMS	COMPATIBILTY
Central heating furnace system (24 V)**	
Wall-mounted furnace	
Multi-stage system	
Single stage heat pump	
Electric radiant floor heater	
Heat pump	
Electric baseboard heater (120 V/240 V)	•
Fan assisted (convection heaters)	•
Electric radiant ceiling heater	•

**Not compatible with some hot water heating systems.
NOT COMPATIBLE WITH CENTRAL HEATING FURNACES (LOW-VOLTAGE CIRCUITS).
DO NOT WIRE TO A SYSTEM EXCEEDING 12.5 A (3000 W @ 240 V OR 1500 W @ 120 V)

Choosing a Location for the Thermostat

When replacing an existing thermostat, the new thermostat should be mounted on the existing metal electrical box that controls your heater.

Safety Note: Ensure the thermostat is not near heat sensitive/flammable material, such as exposed wood, wallpaper, loose papers, or other fire hazards. The normal surface temperature of the operating thermostat is 45-55ºC (113-131ºF). The thermostat is rated to operate safely at these temperatures but should be kept away from fire hazards.

For NEW home installation, choose the location of the metal electrical box carefully.

It SHOULD BE MOUNTED:
- Approximately 5' (1.5 m) from the floor.
- Near or in a frequently used room, preferably on an inside partitioning wall.
- On a section of wall without pipes or duct work.

It SHOULD NOT BE MOUNTED:
- Near temperature-radiating objects that may cause false readings.
  (For example: near a window, next to a door leading outside, or near the heat from a lamp, direct sunlight or a fireplace.)
- Near concealed pipes and chimneys.
- In areas with poor air circulation. (For example behind a door or in an alcove.)

Installation Precautions

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The manufacturer assumes no responsibility for improper wiring, or any resulting damages.
Improper installation by a non-professional automatically voids the warranty.

Before installation begins:
- Verify that the heating appliance being connected to is within the specified load range.
- Ensure that the thermostat being replaced is also rated for 120 V or 240 V.
- Ensure that the heating system is protected by appropriate circuit breakers or fuses connected to COPPER conductors only.

TO AVOID FIRE, SHOCK OR DEATH, SHUT OFF POWER SUPPLY AT THE CIRCUIT BREAKER OR FUSE AND TEST THAT THE POWER IS OFF BEFORE WIRING.

Installation Procedure

1. Disconnect the power to your existing thermostat and the heater(s) it controls.

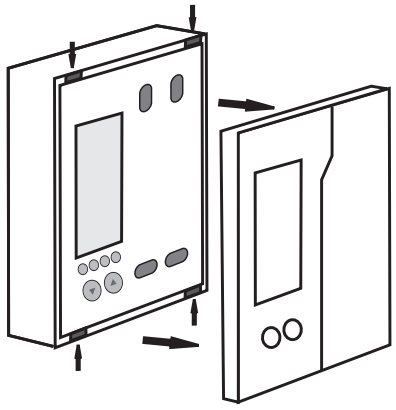
2. Remove the existing thermostat carefully and identify the two wires from the wall box.
   The wiring designation is generally: BYPASS / CONNECT.

3. Gently remove the faceplate from the new thermostat to reveal the mounting holes but DO NOT remove the screws from the back of the unit. These screws hold the thermostat together.

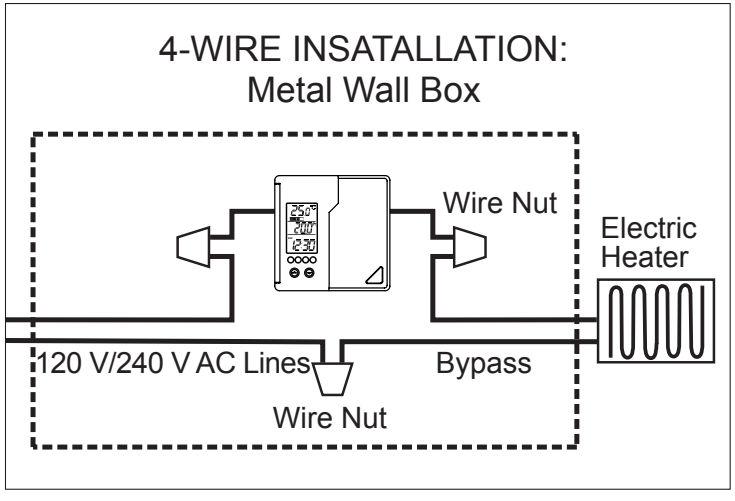
4. Using the wire nuts provided, securely fasten each wire from the new thermostat to the live wires in the wall box. Refer to the diagram.
   CAUTION: ENSURE NO BARE WIRE IS EXPOSED.
   Note: If there are four wires connected to the old thermostat, the two extra wires should be connected together with a wire nut (not supplied).

5. Mount the thermostat on the wall box, using the two supplied screws, through the mounting holes, then replace the faceplate. (Place screws in the two right or two left holes.)

6. Reconnect power supply. Installation is complete.



Remove Faceplate
To remove the thermostat faceplate, very gently apply pressure to the crease of the thermostat to detach the four notches. Then pull the faceplate forward.



Reset the Thermostat after Installation

Reset Clock

If you have successfully installed the thermostat, but the LCD screen does not display or the display seems abnormal, remove the faceplate and press the RESET button (with a small, blunt object) to reset the clock to Monday 9:00 a.m. The temporary override function will also be cancelled.

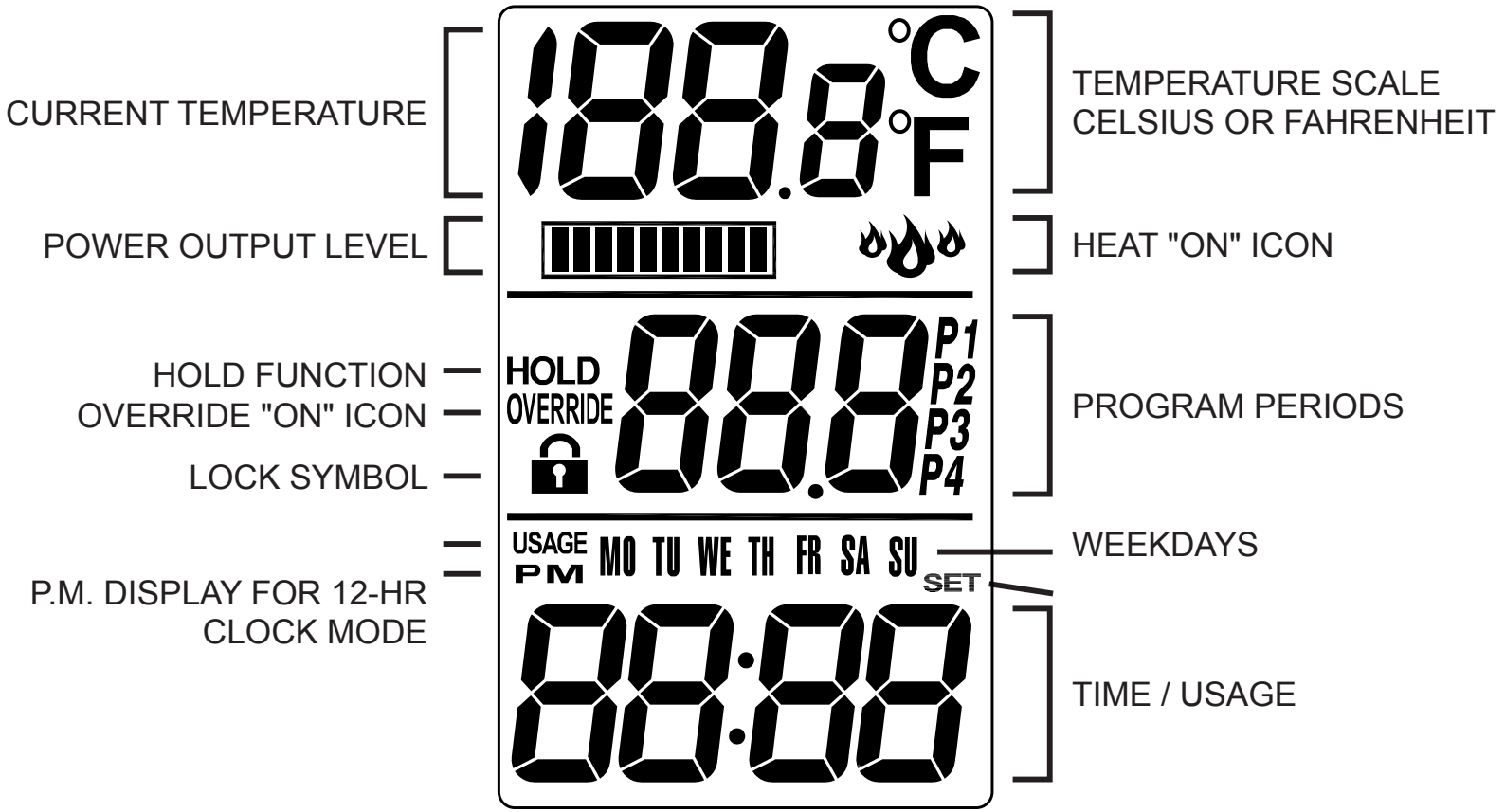
Note: If High-Limit Function has been enabled, the lock symbol will begin flashing for five minutes.
See page 14 for further details on the Setting of High-Limit Function.

Reset All Settings

If the above method does not work, you may have to reset all thermostat settings.
Note: This is a total reset, which clears all settings of custom programs, clock time and option settings.
The unit will be restored to factory-default settings.

To reset all settings:
1. Remove the thermostat faceplate to reveal the RESET button.
2. Press HOLD and RESET buttons at the same time to clear all settings.

LCD Screen


CURRENT TEMPERATURE
POWER OUTPUT LEVEL
HOLD FUNCTION
OVERRIDE "ON" ICON
LOCK SYMBOL
P.M. DISPLAY FOR 12-HR CLOCK MODE
188.8
°C
°F
HOLD
OVERRIDE
88.8
P1
P2
P3
P4
USAGE
PM
MO TU WE TH FR SA SU
SET
88:88
TEMPERATURE SCALE CELSIUS OR FAHRENHEIT
HEAT "ON" ICON
PROGRAM PERIODS
WEEKDAYS
TIME / USAGE

Buttons and Display

Buttons

USAGE/TIME
To set the current and program time or to display the total heater usage time per day or week.

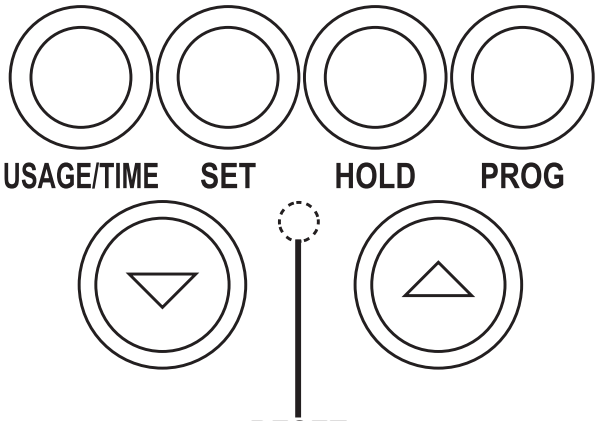
SET
To set the user options or to set the clock and the day of the week.

HOLD
To override temperature programs.

PROG
To enter program mode and scroll settings.

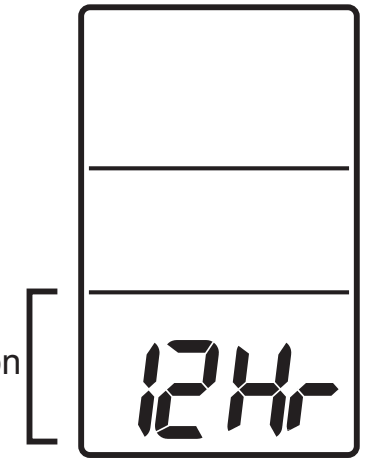
▲ / ▼
To manually adjust the temperature or to make selections in program mode or option mode.

RESET
Resets program / clock to factory defaults.



RESET
(Remove the faceplate to locate the Reset button)

Option Settings



This thermostat has four OPTION settings that can be customized by the user.
The OPTION data will appear in the lower pane of the LCD screen.
It is recommended to set up the OPTION settings after you install the new thermostat or before you start programming it.
While it is still possible to enter Option Settings any time to make changes, it may result in a change or a reset of your set programs.

OPTION 1 - 12-Hour or 24 Hour Clock Format

1. Press and hold SET for three seconds to enter the Option Setting mode.
   The first option is 12-hour or 24-hour clock format. (12:Hr will flash).
2. Press ▲ or ▼ to toggle between 12-hour or 24-hour format.
3. Press SET to proceed to OPTION 2 or wait for 15 seconds to confirm and exit Option Settings.

Note: 12-hour clock format is the default mode.

OPTION 2 - Heat Cycle Rate

1. Press SET again to advance to the second option. (Cr:1 will flash).
2. Press ▲ or ▼ to adjust setting. (See cycle rate supplementary information on page 12.)
   Cr:0 = Full power, No Cycle (For fan-assisted baseboards and electric heating devices.)
   Cr:1 = 20 Sec. Proportional Power (For non-fan-assisted baseboards and electric heating devices.)
   Cr:2 = 240 Sec. Proportional Power (For fan-assisted heaters and radiant floor/ceiling heating devices.)
3. Press SET to proceed to OPTION 3 or wait for 15 seconds to confirm and exit Option Settings.

OPTION 3 - Pre-Comfort Recovery

1. Press SET again to select pre-comfort recovery. (rE:0 will flash)
2. Press ▲ or ▼ to adjust setting. (See pre-comfort recovery supplementary information on page 13.)
   rE:0 = pre-comfort recovery feature disabled.
   rE:1 = pre-comfort recovery feature enabled.
3. Press SET to proceed to OPTION 4 or wait for 15 seconds to confirm and exit Option Settings.

OPTION 4 - ºC or ºF (Celsius or Fahrenheit scale) Display

1. Press SET to select Celsius or Fahrenheit scale. (Current temperature will flash.)
2. Press ▲ or ▼ to toggle between ºC or ºF temperature scales.
3. Press SET or wait for 15 seconds to confirm and exit Option Settings.

Note: A change of the temperature display mode will result in the reset of all programs.
(i.e. All programs set by user will be deleted.)

Heat Cycle Rate supplementary information

Cycle rate determines the heating on/off time cycles and the level of proportional power required to operate the heater.
(To have the heater operate at full power all the time, select Cr:0 to disable heat cycling.)
The cycle rate is based on the type of heating system and the power load required to operate the device.
The higher the load (size of baseboard or radiant heater), the greater the heat generated.

Cr:0 is continuous operation (no cycling), with a variance of +/- 0.3ºC (+/- 0.6ºF). The heating unit will operate at full power and the power bar icon will appear full. This function is for users who do not want their electric heating devices to turn on and off frequently.

Cr:1 is a 20-seconds cycle rate with proportional heating. This means the heating will turn on and off once every 20 seconds to provide a stable room temperature. This cycle rate allows a proportional level of power to the heating device. This is indicated on the thermostat display by the power bar icon being partially filled, indicating the amount of power going to the heater. This setting is recommended for standard electric heating devices, without fans, and will provide the most energy-efficient heating and a stable temperature.

Cr:2 is a 240-second cycle rate. This means the heating will turn on and off once every 240 seconds.
This is the recommended setting for fan assisted heaters and radiant floor/ceiling heating devices.

Pre-comfort Recovery supplementary information

This thermostat is equipped with a "Pre-comfort Recovery" feature that will activate the heating system in advance of the actual set program time so that the room will be at the desired temperature at the start of the program time.

It is normal for the system to be activated earlier than the actual set program time (up to one hour).
The pre-comfort recovery can be disabled if desired. If pre-comfort recovery is turned off (rE:0), heating will only be initiated at the exact start time of the program period.

Setting of High-Limit Function

The high-limit function is a safety feature that allows you to select the maximum temperature limit of the thermostat. When this function is on, the thermostat will not allow heating settings to exceed the selected temperature limit. It is recommended to refer to the specifications of your particular heating device and set up the high-limit function once you installed the new thermostat.

To ENABLE the high-limit setting feature:
1. Press ▲ or ▼ to scroll to the desired high-limit temperature.
   (This temperature will display in the program temperature pane on the LCD screen.)
2. Press USAGE and SET buttons at the same time for three seconds to activate high-limit function at the set temperature.
   (The LOCK symbol will appear to confirm that the high-limit feature is on.)

LOCK symbol

To DISABLE the high-limit setting feature:
1. Press the RESET button. (Remove the faceplate to locate the reset button. Press with a blunt object.)
   (Clock will be reset and the lock symbol will begin flashing for five minutes.)
2. Press the USAGE and SET buttons at the same time when the lock symbol is flashing.
   (When the LOCK symbol disappears the high-limit feature is off.)

Note: If a high-limit temperature is selected before programming, it will be the highest temperature you can set for any of the program times.
If a high-limit temperature is selected after programming, any programmed temperatures set higher than the new limit will be automatically reduced to the high-limit temperature.

Clock Settings

Clock Format

12-hour clock format is the default mode. You can switch between 12-hour or 24-hour clock format in Option Settings. (Page 11).

Set Clock / Weekday

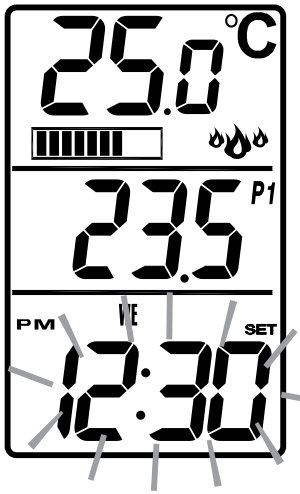
1. Press SET button once to enter the clock-setting mode (SET icon will appear).

2. Press ▲ or ▼ button to scroll to the correct time of day. Hold the button to accelerate.

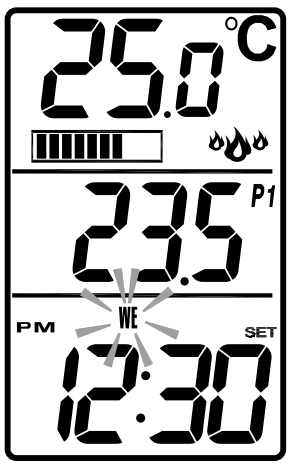
3. Press SET again to enter weekday settings. (Weekday symbols will flash.)

4. Press ▲ or ▼ button to set day of the week. Press SET or wait 15 seconds for normal display to return.

5. Press SET or wait 15 seconds to complete clock setting and exit.



Set Clock
(Time flashes)



Set Weekday
(Weekday symbol flashes)

ºC or ºF (Celsius or Fahrenheit) Temperature Display mode

The Celsius format is the default display format of this thermostat. You can switch between ºC or ºF format in Option Settings but a change of the temperature display mode will result in the reset of all programs. (Page12).

About Programs

This thermostat is equipped with 5+1+1 DAY PROGRAMMING allowing you to program one schedule of temperature changes for Monday to Friday, another for Saturday and a third set for Sunday each with four temperature settings and start times per day (P1, P2, P3, P4). This thermostat is pre-programmed for your convenience or you can set your own programs as desired.

P1: MORNING	This is typically the morning period, when you may prefer to wake up at a warmer temperature.
P2: DAY	This is usually an energy-saving period, for the time when you are away from home. The temperature setting can be reduced to minimize energy consumption. If you are not away from home on a particular day you may override this setting by manually adjusting the temperature buttons.
P3: EVENING	This is the period when you typically return home, and would like the house at a comfortable temperature. In general, the temperature is set to warmer settings during the winter and cooler settings during the summer. If you do not often leave the house during the day, period 1, 2 or 3 can be set at the same temperature.
P4: NIGHT	This is the period when you would typically be asleep. You may set the temperature for energy savings or for comfort, as desired.

Default Programs and Customize Programs

These are examples of possible temperature settings. The first is the factory-default setting and the second is a custom setting.

1. Default / Pre-programmed time and temperature settings

PERIOD	PROG	TIME	HEAT SET POINT
Morning	P1	6:00 a.m.	20.5ºC (69.0ºF)
Day	P2	8:00 a.m.	17.5ºC (63.5ºF)
Evening	P3	5:00 p.m.	21.0ºC (70.0ºF)
Night	P4	10:00 p.m.	17.0ºC (62.5ºF)

Example 1
This setting is the factory default and will activate automatically. Convenient for people who are away from home during the day and wish to maximize energy savings.

2. Custom / Pre-programmed time and temperature settings

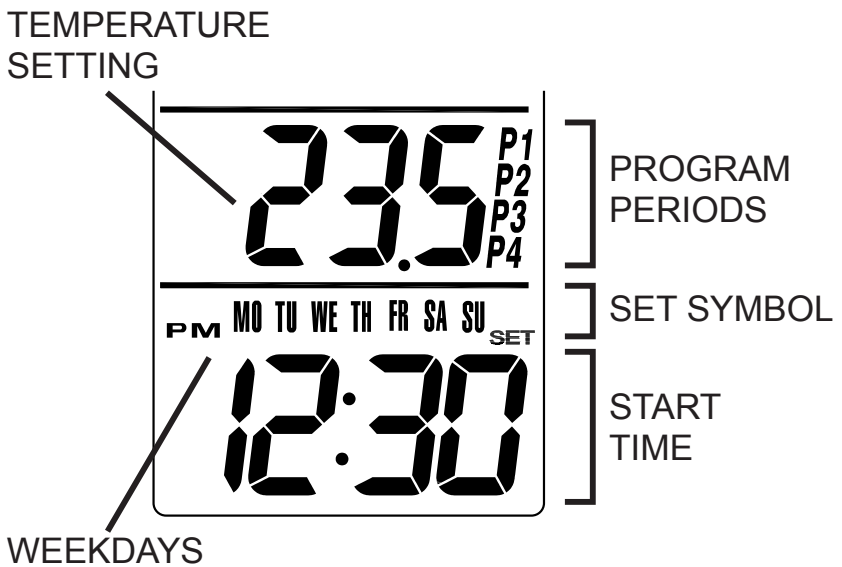
PERIOD	PROG	TIME	HEAT SET POINT
Morning	P1	7:00 a.m.	20.5ºC (69.0ºF)
Day	P2	8:00 a.m.	20.5ºC (69.0ºF)
Evening	P3	5:00 p.m.	20.5ºC (69.0ºF)
Night	P4	11:00 p.m.	17.5ºC (63.5ºF)

Example 2
This is an example of custom a program set by the user. Convenient for people who are at home during the day, and want the home warm all day, but want a cooler temperature at night.

Customizing the Program

It is recommended you write out a plan of time and temperatures for your programs prior to entering them. Note: the times set for P1, P2, P3, P4 must be in that order and on the same day. P1 will be the first after midnight and P4 will be the last prior to the following midnight. You will enter four program periods to be used Monday to Friday first, then four for Saturday and lastly Sunday.

1. Press PROG to enter program setting mode. (Symbols for Monday to Friday and P1 will appear.)
2. Press ▲ or ▼ to set temperature for P1. (The temperature digits will flash.)
3. Press USAGE/TIME to switch to start time mode. (Start time will flash.)
4. Press ▲ or ▼ to set start time for P1. (Time will flash.) Note: USAGE/TIME will toggle between temperature and start-time modes.
5. Press PROG to adjust the next program periods P2, P3, P4. Repeat the above steps until all four programs are adjusted to your needs.
6. Press PROG to enter Saturday programming periods (P1 will appear.). Repeat steps 2 to 5 again for Saturday, then press PROG and repeat again for Sunday.
7. Press SET to finish programming.



High-Limit Function

The high-limit function is a safety feature that allows you to select the maximum temperature limit.
For details, see section on Setting of High-Limit Function (Page 14).

Reset Programs / All Settings

If you have difficulties programming your thermostat, you may wish to reset the unit to begin again.

Reset Programs - to delete all CUSTOM programs

1. Press SET for three seconds to enter Options mode.
2. Press PROG for three seconds to clear all custom programs.

Note: This action will restore custom programs to the factory-default programs only, but will not affect the clock time or option settings.

Reset All Settings - to delete all settings

1. Remove the thermostat faceplate to reveal the RESET button (Page 7).
2. Press HOLD and RESET buttons at the same time to clear all settings.

Note: This is a total reset, which clears settings for custom programs, clock time and option settings. The unit will be restored to factory-default settings.

Temporary Override

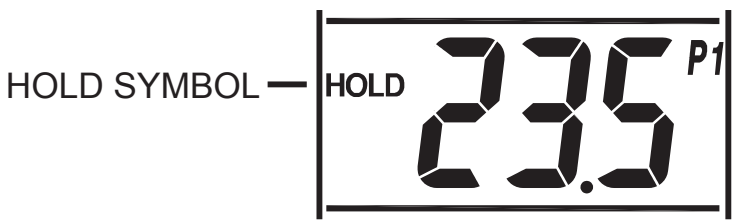
This function will allow you to change the temperature setting, until the start time of the next program period.

1. Press ▲ or ▼ to manually adjust to the desired temperature setting.

Note:
The temperature can be set in increments of 0.5ºC or 0.5ºF.
The temperature setting range is from 5-35ºC (41-95ºF).
Press and hold ▲ or ▼ button down to accelerate the settings.
The thermostat will automatically return to the regular program at the next scheduled program period.

Hold Function

This function maintains a constant temperature and disables temperature program periods.
1. Press the HOLD button once to enter the Hold mode. (HOLD symbol will appear.)
   When Hold mode is activated, you may manually adjust the temperature by pressing ▲ or ▼. However, all programs will be disabled. If no temperature changes are manually selected, the current temperature setting will remain the same indefinitely.
2. To cancel the Hold function, press the HOLD button again. (HOLD symbol will disappear.)
   The temperature will automatically return to the programmed temperature for that time period.



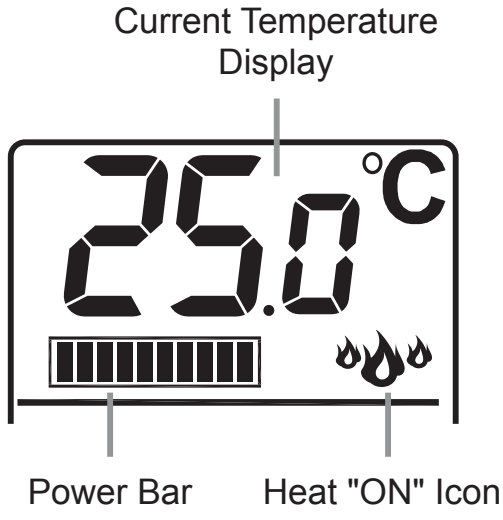
Current Temperature Display

The current room temperature is displayed on the LCD screen.

Power Bar

This thermostat is equipped with a proportional regulation system to determine the precise amount of power required by the electric heater to maintain the temperature setting.

The Power Bar indicates the current output power level.
1 bar = 10% power, 10 bar = 100% power
When the heating system is activated at partial power, a proportional number of bars will appear (e.g. 60% = 6 bars). When the heating system is activated at maximum power, all 10 bars will be displayed.



Heat "ON" Icon

The flashing fire symbol will be displayed when the heating system is on.

Usage Monitor

The thermostat tracks the system "ON" time - the total time the heating equipment is running.
Press the USAGE button once to view USAGE TODAY.
Press the USAGE button again to view USAGE THIS WEEK (total time from Monday to today).
Press the USAGE button again to view 7-DAY USAGE (total time from last six days plus today).

- USAGE TODAY starts at midnight.
- USAGE THIS WEEK automatically resets itself on Monday morning, after midnight on Sunday.
- A new week begins Monday morning.

Supplementary Information

Memory Backup

The memory backup will save and protect programs and option settings indefinitely. If a power outage occurs only the clock setting may be affected. The clock will continue to run, and display on the LCD screen, for up to one to two days even without power, due to the re-chargeable backup battery inside the unit. However, if the power outage is longer than two days the clock will be reset (the unit will reset itself to a 9:00 a.m. default).

Thermostat Surface Temperature

In normal operation the surface temperature of the thermostat may range from 45-55ºC (113- 31ºF).
This is perfectly normal, as this thermostat is rated to operate safely at these temperatures.
However it is recommended that the thermostat not be installed near heat sensitive/flammable material such as exposed wood, wallpaper or other fire hazards.

Specifications:

Number of Programs: 5+1+1 Day with four settings per day
Temperature Display Range: 0-55ºC (32-131ºF)
Temperature Setting Range: 5-35ºC (41-95ºF)
Ratings: 120 V/240 V AC, 60 Hz
Maximum Load: (12.5 A)
3000 W @ 240 V or 1500 W @ 120 V
Minimum Load: 500 W @ 240 V

Troubleshooting

Problem	Solution
LCD screen is blank	• Check if the circuit breaker is open • Check if there has been a power failure • Check that the thermostat is wired to a 500 W or greater circuit • Check the wiring installation with a certified electrician • Press the RESET button under the faceplate
Programming Issues: Heating is not being activated at the programmed times.	• Review the programming guide to ensure the programs have been entered correctly • Check that the clock has been set to the correct time. (e.g. a.m./p.m. interchanged) • Check if there has been a power failure • Reset programs/all settings (Page 19) • Check if Temporary Override/Hold Function is being used (Page 20)
The heating system does not activate	• Check the thermostat LCD screen to see if there has been a power failure • Check if the circuit breaker is open • Check heating device to see if it is disabled. • Check the wiring installation with a certified electrician
The heating system is running constantly	• Check if the temperature is set too high • Check the wiring installation with a certified electrician
The temperature display is incorrect	• Ensure thermostat is not installed near a draft, in direct sunlight or near heat-generating devices such as air-conditioners or heaters
Heating system seems to cycle too often	• Check and ensure that you have selected a Cycle Rate that matches your particular heating system (Page 12-13)
The thermostat feels HOT to the touch	• The normal surface temperature of the thermostat is 45ºC-55ºC (113ºF-131ºF) while in operation. This is perfectly normal, as this thermostat is rated to operate safely at these temperatures. However, it is recommended that the thermostat should not be installed near heat sensitive/flammable materials or other fire hazards.

Supplementary Information

Limited 3-year Repair Warranty

This product carries a 3-year manufacturer's warranty against defects in workmanship and materials.
This product is not guaranteed against wear or breakage due to misuse and/or abuse.

If the product is defective, return it with a dated proof of purchase, to the retailer from which you purchased it.

NOT COMPATIBLE WITH ANY 120/240 VOLT CIRCUIT.

CONTROL by/par Canarm™
Customer Service number (English) 1-800-265-1833
Numéro du Service à la Clientèle de Canarm (Français) 1-800-567-2513

Made in China

Imported by/Importé par
CONTROL™ by Canarm, CANARM Ltd/ltée.,
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